

(2) A limit engine torque corresponding to maximum continuous power and propeller speed acting simultaneously with the limit loads from flight condition A of § 23.333(d); and

(3) For turbopropeller installations, in addition to the conditions specified in paragraphs (a)(1) and (a)(2) of this section, a limit engine torque corresponding to takeoff power and propeller speed, multiplied by a factor accounting for propeller control system malfunction, including quick feathering, acting simultaneously with lg level flight loads. In the absence of a rational analysis, a factor of 1.6 must be used.

(b) For turbine engine installations, the engine mounts and supporting structure must be designed to withstand each of the following:

(1) A limit engine torque load imposed by sudden engine stoppage due to malfunction or structural failure (such as compressor jamming).

(2) A limit engine torque load imposed by the maximum acceleration of the engine.

(c) The limit engine torque to be considered under paragraph (a) of this section must be obtained by multiplying the mean torque by a factor of—

(1) 1.25 for turbopropeller installations;

(2) 1.33 for engines with five or more cylinders; and

(3) Two, three, or four, for engines with four, three, or two cylinders, respectively.

[Amdt. 23-26, 45 FR 60171, Sept. 11, 1980, as amended by Amdt. 23-45, 58 FR 42160, Aug. 6, 1993]

§ 23.363 Side load on engine mount.

(a) Each engine mount and its supporting structure must be designed for a limit load factor in a lateral direction, for the side load on the engine mount, of not less than—

(1) 1.33, or

(2) One-third of the limit load factor for flight condition A.

(b) The side load prescribed in paragraph (a) of this section may be assumed to be independent of other flight conditions.

§ 23.365 Pressurized cabin loads.

For each pressurized compartment, the following apply:

(a) The airplane structure must be strong enough to withstand the flight loads combined with pressure differential loads from zero up to the maximum relief valve setting.

(b) The external pressure distribution in flight, and any stress concentrations, must be accounted for.

(c) If landings may be made with the cabin pressurized, landing loads must be combined with pressure differential loads from zero up to the maximum allowed during landing.

(d) The airplane structure must be strong enough to withstand the pressure differential loads corresponding to the maximum relief valve setting multiplied by a factor of 1.33, omitting other loads.

(e) If a pressurized cabin has two or more compartments separated by bulkheads or a floor, the primary structure must be designed for the effects of sudden release of pressure in any compartment with external doors or windows. This condition must be investigated for the effects of failure of the largest opening in the compartment. The effects of intercompartmental venting may be considered.

§ 23.367 Unsymmetrical loads due to engine failure.

(a) Turbopropeller airplanes must be designed for the unsymmetrical loads resulting from the failure of the critical engine including the following conditions in combination with a single malfunction of the propeller drag limiting system, considering the probable pilot corrective action on the flight controls:

(1) At speeds between V_{MC} and V_D , the loads resulting from power failure because of fuel flow interruption are considered to be limit loads.

(2) At speeds between V_{MC} and V_C , the loads resulting from the disconnection of the engine compressor from the turbine or from loss of the turbine blades are considered to be ultimate loads.

(3) The time history of the thrust decay and drag buildup occurring as a result of the prescribed engine failures must be substantiated by test or other